



National Chemical Technician Award Candidate Form

Thank you for your participation in the National Chemical Technician Award program. For each nominee, a completed nomination packet is required. The packet must include, at minimum, the following:

- The completed nomination form
- At least one letter of recommendation from someone familiar with the candidate's work

Other materials can be included, if desired; however, the completed packet, included letter(s) of recommendation and supporting materials, must not exceed six single-sided, single-spaced pages. Type must be at least 10-point font.

[Note: this cover page is not considered part of the nomination packet and should be deleted or recycled prior to submitting the packet.]

The form should expand as needed to include all information you wish to include in the form. All material included in the nomination packet should be cleared for release outside your organization. ***Packets exceeding six pages in length or containing proprietary, confidential, or private information will not be accepted.***

Nomination packets must be received by September 30, 2011. If packets are submitted by email or fax, hardcopies should also be submitted by mail within 7 days of the September 30th deadline, including the original signed letter(s) of recommendation.

Submit nomination packets to

Mark O'Brien
Staff Liaison, ACS Committee on Technician Affairs (CTA)
Office of Technician Education and Resources
American Chemical Society
1155 Sixteenth St. NW
Washington, DC 20036
1-800-227-5558, ext. 8212 (office) | [202-872-4353](tel:202-872-4353) (fax)
cta@acs.org

Contact Mark O'Brien (1-800-227-5558, ext. 8212, cta@acs.org) with any questions or concerns.

National Chemical Technician Award Candidate Form

Candidate information

Name: Nicole Brehm **Title:** Senior Technician, R&D
Company name: The Dow Chemical Company
Complete work address: 2301 N. Brazosport Blvd. B-1222/14
Work phone: 979-238-0667 **Email:** Brehm@dow.com

Candidate's immediate supervisor's information

Supervisor's name: Patrick Brutto **Supervisor's title:** Development Leader
Work Phone: 847.808.3766 **Email:** PEBruzzo@dow.com

Nominator's information

Nominator's name: Alexia Finotello/Chanda Klinker **Nominator's title:** Sr. Engineer/Sr. Chemist
Work Phone: 979-238-7008 **Email:** afinotello@dow.com/cklinker@dow.com

Candidate Eligibility

All three boxes in the Eligible column must be checked for candidate to be eligible.

	Eligible	Ineligible
1. Is the candidate a chemistry-based laboratory technician, process technician, operator, analyst, or other applied chemical technology professional?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
2. Has the candidate been employed for at least five years as an applied chemical technology professional?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
3. Is the candidate currently a member of the Committee on Technician Affairs Executive Board and/or Advocacy & Public Relations Subcommittee?	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes

Candidate's contribution in six areas of award criteria

Make space as necessary under each category. Total packet, including letter(s) of recommendation, must not exceed 6 pages, minimum 10-point font. Do not include proprietary, confidential, or private information.

Technical Achievements (worth 60%)

- Masters of Science in Chemistry from the University of Houston (2009) while working full time.
- Bachelors of Science in Chemistry from James Madison University (2006).
- Project leader for utilizing and evaluating a current quat commercial product in hair care applications through the development and formulation of hair conditioners containing the quat product.
- Collaborated with external laboratories to acquire necessary product data on formulations containing commercial quat product which revealed improvements in formulation effectiveness in multiple attribute categories.
- Developed a novel research program for the quaternaries business in hair care which includes capabilities to perform screening tests in-house which is necessary for evaluating new and existing products in hair care formulations. Capabilities include panel evaluations, combability measurements and curl retention and humidity studies.
- Designed a product brochure with which to provide customers with key data regarding new product in hair care formulations. A key piece of literature that is used to communicate externally with customers to advertise the benefits of Quat.
- Attended two In-Cosmetics trade shows (Thailand 2010, Italy 2011) which resulted in customer communication and interest in new commercial product.
- Technical liaison for Quat business, serving as a focal point for commercialized quat products in

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personal care with external company applications.

- Independently developed analytical methods (headspace gas chromatography and liquid chromatography) for the identification of impurities at the ppm level necessary for the successful launch of a new quaternary amine product (as additive for Vaseline Sheer Infusion Lotion) in 2009 by working directly with the customer to establish acceptable parameters for product qualification and with plant personnel to successfully implement methods during production.
- Technical focal point for plant instrumentation including advanced troubleshooting for LC and GC.
- Responsible for the training of quality personnel at production facility on methods for new commercial product to ensure compliance and preparation of final in-specification product.
- Synthesized and characterized unique quaternary amines for new product development with potential for next generation personal care applications and secured IP (3 disclosures).
- Conducted distillation and characterization experiments to evaluate waste stream contents as suitable for new surfactant development.
- Evaluated various surfactant products for impurities and residual materials using NMR which resulted in a new evaluation method for future cases of material contamination.

Other (Considered together to make up the remaining 40%)

Leadership/Mentoring (1-15%)

- Project leader for Quat product hair care development research
- Six Sigma Green Belt Project Leader Certified
- Brazosport Section of ACS Secretary 2009
- Brazosport Section of ACS Communications Chair 2011
- Brazosport Section of ACS Event Coordinator Volunteer 2009 - 2011
- 2011 Inaugural Lake Jackson Doggy Dash 5k Team (charity race) - Founding Member and Volunteer Coordinator
- Quaternary Amine Lab Equipment Trainer/Lab Owner (NMR)

Number of communications/publications (1-5%) Please do not include titles.

- 22 Dow Internal Reports (13 as first author, 9 sole author)
- 3 Patent Disclosures
- 4 Dow Methods - These are internally developed analytical methods rigorously validated to ensure quality defensible results. They were leveraged to be used in Dow manufacturing and quality control laboratories. These methods were also leveraged externally to Unilever.
- 16 Methods & Lab Procedures for Business internal use (SOPs)
- Presenter at the 2010 Thailand In Cosmetics Trade Show
- Presenter at the 2011 Milan In Cosmetics Trade Show.

External publications, presentations, patents (1-5%)

- 3 Patent Applications
- Designed the Quaternary Amines Business marketing brochure for PD Quat in Hair Care Cosmetics Trade Show Milan 2011
- Presenter at the 2010 Thailand In Cosmetics Trade Show
- Presenter at the 2011 Milan In Cosmetics Trade Show
- "Chemistry in our Lives" presentation to Brazoria County Petrochemical Council to celebrate the International Year of Chemistry

Internal presentations, publications (1-5%) Include SOPs, presentation to teams, etc.

- 22 Dow Internal Reports (13 as first author, 9 sole author)
- 3 patent disclosures
- 4 Dow Methods - These are internally developed analytical methods rigorously validated to ensure quality defensible results. They were leveraged to be used in Dow manufacturing and quality control laboratories. These methods were also leveraged externally to Unilever.
- 16 Methods & Lab Procedures for Business internal use (SOPs)

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- Excellent routine presentations given to project management team, customers and production facilities.

Contribution to quality, safety, and other initiatives (1-5%)

Nicole undertakes all of her daily tasks with a positive attitude towards safety and is very knowledgeable in Dow's main safety communication program, Management of Change. She has written many operating procedures, operating methods and actively participated in safety reviews. She has trained numerous (10+) coworkers on safe operating procedure of using NMR. In her roles for the local section of ACS, she has managed and maintained the groups historical records and updated section by laws.

Awards (1-5%)

- Recipient of the Dow Technology Center Award for work on the PD Quat Commercialization Project
- Awarded for work as Capital Project Leader for Quaternary Amines Business
- 8 Internal Recognition Awards

Professional and community activities (ACS, AIChE, outreach, etc.) (1-10%)

- Brazosport Section of ACS Secretary 2009
- Brazosport Section of ACS Communications Chair 2011
- Brazosport Section of ACS Event Coordinator Volunteer 2009-2011
- 2011 Inaugural Lake Jackson Doggy Dash 5k Team (Charity Race) - Founding Member and Volunteer Coordinator

National Chemical Technician Award Candidate Form

American Chemical Society
1155 Sixteenth St., NW
Washington, DC 20036
Re: Nomination of Nicole Brehm for National Chemical Technician Award
Dear Sir or Ms:

We have worked with Nicole for 2 years as part of the Brazosport Section of ACS. We have observed Nicole's excellent work ethic and drive for volunteering in the community. She is well deserving of recognition for her on-going efforts.

Communications/Publications: Nicole has written and published 13 internal reports (7 first author) at the Dow Chemical company. As a technologist, her job role does not require her to write any CRIs. However, her high standards of excellence and work ethic drive her to exceed her job requirements with above average technical experimentation. This work results in multiple CRIs per year including 4 sole authored reports.

ACS Leadership: Nicole has been an active member of the Brazosport Local Section of the ACS for the past three years. Starting with her elected position as the section's secretary in 2009, she went above and beyond her role to maintain an extraordinary level of organization. Her passion for historical documentation led her to organize and maintain archives of our sections records and retain them for future years. After completing her tenure as secretary, she continued to play a role in the local chapter by mentoring the incoming secretaries and volunteering for numerous events. In 2011, Nicole increased her involvement by proactively filling unmet needs by creating a new role as Communications Chair. In this role, she brought our section to the 21st century by initiating and maintaining our local website on the national page, creating a facebook page and actively working with the chair-elect, secretary, and newsletter chair to coordinate our communication and really get us "out there" in the community. She has been actively involved in many seminar events and our leadership development workshops. She has been a phenomenal addition to our local community and we hope to see her involvement continue for years to come.

Community Leadership: 2011 Inaugural Lake Jackson Doggy Dash Team - In 2011 Nicole participated in developing and implementing a 5k run/walk race to raise money for the Brazoria County Society for the Prevention of Cruelty to Animals (SPCA). She was a founding member for the event and involved in every facet of the decision making. Nicole was instrumental in writing/distributing the sponsor request letters, determining the supplies needed for the race, along with gathering and coordinating race day volunteers. The event was flawlessly executed with leadership from Nicole in coordinating the volunteers. Over \$2500 was collected for the local SPCA. Her leadership skills helped make this event possible and save many animals lives.

It has been our privilege to work with Nicole in the Brazosport community. Being one of her close friends has also let us see how willingly she gives her time and talent in service to others. She selflessly gives to those around her, including nominating others for this very same award. She is a bright young leader looking for her next moment to shine. Her drive for excellence is awe inspiring. We sincerely hope the awards committee will consider Nicole for this award.

Best Regards,

Alexia Finotello, Ph.D.
Chanda Klinker, Ph.D.

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ACS Committee on Technician Affairs
American Chemical Society
1155 Sixteenth St., NW
Washington, DC 20036
Re: Nomination of Nicole Brehm for National Chemical Technician Award
Dear Sir or Ms:

I worked with Nicole for three and a half years as part of the Quaternaries R&D group at The Dow Chemical Company, Texas Operations. During that time Nicole displayed an excellence in work ethic and technical achievement that I cannot truly do justice to in a single page. She participated not only in small molecule research activities, but in plant production support and analytical method development.

Technical Achievements: Nicole *independently* planned and instituted a research program in haircare for both existing commercial products and developmental molecules. The Quaternaries group had no prior history or experience in the haircare market and Nicole's research program was the first of its kind in the Quaternaries business. The program included synthesis of novel molecules, formulation of synthesized molecules, and application testing of the formulations. Nicole did a thorough and superior job executing all aspects of this program, culminating in her providing the technical representation of our products at the In-Cosmetics trade show in Thailand. This year she also visited a potential external customer in Germany, Henkel, giving a technical review.

Nicole has also independently developed and validated official DOWM analytical methods for a recently commercialized product in the Quaternaries business. She was responsible for the determination of trace impurities using headspace gas chromatography and the determination of iron content using spectrophotometric methods. In 2009 she earned a **Technology Center Award** for being a contributing member of the commercialization team. She has also developed internal business analytical methods for raw material and in-process reaction samples, using both headspace gas chromatography and liquid chromatography.

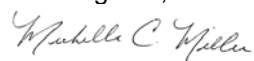
Communications/Publications: Nicole has been an active participant in the design and content of product brochures, the filing of intellectual property surrounding the haircare program, and she has given several poster presentations to the Dow technical community. Nicole has also given presentations to the entire performance materials R&D group (>50 people) and participated in technical project reviews as a project leader.

Quality/Safety: In addition to all of her research responsibilities Nicole also provides support to the Quaternaries manufacturing product quality (MPQ) lab. She helped implement the methods she developed and also trained the MPQ technologist at the plant. She provides continuing assistance through troubleshooting instruments and checking calibration standards. Nicole undertakes all of her daily tasks with a positive attitude towards safety and is very knowledgeable in Dow's main safety communication program, Management of Change. She has written many operating procedures and actively participated in safety reviews.

Leadership: Nicole regularly takes on responsibilities that are beyond her job role. She is in charge of the Capital Budget allocation for the Quaternaries R&D group and is also the building Focal Point for the NMR (which includes maintenance and user training).

It was my privilege to work with Nicole during my time in the Quaternaries R&D group. Her contributions go beyond what is highlighted here. She displays uncommon initiative and routinely went above and beyond the responsibilities of her job role. I hope the committee will seriously consider her well-earned nomination for this award

Best Regards,



Michelle C. Miller, Ph.D

